

CLAIMS

What Is Claimed Is:

5 1. A method of diagnosing endometrial irregularities by screening an endometrial sample or bodily fluid for the presence of the ebaf or ebaf splice variants that are differentially expressed.

10 2. The method according to claim 1, wherein said screening step further includes screening by Northern blot analysis or Western blot analysis.

15 3. The method according to claim 1, wherein said screening step further includes screening using immunohistochemical staining.

20 4. A diagnostic tool for determining the presence of endometrial irregularities comprising: screening means for screening a sample for the presence of ebaf.

25 5. The diagnostic tool according to claim 4, wherein said screening means is a Northern blot analysis.

6. The diagnostic tool according to claim 4, wherein said screening means is a Western blot analysis.

Sub F1
7. The diagnostic tool according to claim 4,
wherein said screening means is an immunohistochemical
stain.

5 8. The diagnostic tool according to claim 4,
wherein the ebaF protein is detected.

Sub F1
9. The diagnostic tool according to claim 4,
wherein the mRNA encoding ebaF is detected.

10 10. The diagnostic tool according to claim 4,
wherein the endometrial irregularity is infertility.

15 11. The diagnostic tool according to claim 4,
wherein the endometrial irregularity is endometriosis.

20 12. The diagnostic tool according to claim 4,
wherein the endometrial irregularity is abnormal uterine
bleeding.

Sub F1
25 13. A contraceptive composition comprising an
effective amount of ebaF in a pharmaceutically acceptable
carrier.

30 14. A contraceptive device comprising an
effective amount of ebaF in a pharmaceutically acceptable
carrier.

15. A diagnostic kit for timing conception
comprising screening means for screening a sample for the
presence of ebaF.

Sub F1
16. The diagnostic kit according to claim 15,

wherein the *ebaf* is a protein.

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17. The diagnostic kit according to claim 17,
wherein the *ebaf* is mRNA.

18. A method of treating endometrial irregularities by down-regulating the expression of *ebaf*.

Sub

10 19. A method for determining endometrial receptivity level by determining the levels of *ebaf* by sampling tissue and bodily fluids.

15 20. A method for determining endometrial receptivity level by determining the levels of *ebaf* by immunoassay.

20 21. A method for determining endometrial receptivity level by determining the levels of *ebaf* by immunohistology.

22. A method for determining endometrial receptivity level by determining the levels of *ebaf* by PCR.

25 23. A method for determining endometrial receptivity level by determining the levels of *ebaf* by northern, western, or southern blot.

30 24. A method of diagnosis and prognosis of infertility by determining optimal treatment or treatment response by determining *ebaf* levels.

25. A method of diagnosis and prognosis of

endometriosis by determining optimal treatment or treatment response by determining ebaF levels.

26. A method of diagnosis and prognosis of
5 menometrorrhagia by determining optimal treatment or
treatment response by determining ebaF levels.

Sub E
27. An antisera directed to ebaF.

10 28. A marker present in bodily fluids for
determining endometrial receptivity comprising ebaF.

15 29. A marker in bodily fluids for infertility,
comprising ebaF.

30. A method of modulating ebaF to regulate
fertility by modulating the amount of ebaF produced.

Sub F
20 31. A kit for the diagnosis, monitoring, and
prognosis of patients comprising an immunohistology test
for determining ebaF levels.

32. The kit according to claim 31, wherein said
immunohistology test further includes antisera.

25 33. A kit for the diagnosis, monitoring, and
prognosis of patients comprising an immunoassay for
determining ebaF levels.

Sub P
30 34. The kit according to claim 33, wherein said
immunoassay further includes antisera and peptides as
positive controls.

35. A kit for the diagnosis, monitoring, and prognosis of patients comprising a blotting test for determining ebaF levels.

Subj 36. The kit according to claim 35, wherein said blotting test further includes antisera and peptides.

10 37. A kit for the diagnosis, monitoring, and prognosis of patients comprising a PCR for determining ebaF levels.

15 38. The kit according to claim 37, wherein said PCR further includes at least one probe to ebaF.

39. A peptide comprising CASDGALVPRRLQHRP-amide

(Seq Id No.:3).

20 40. A detection device for detecting the presence of at least one variant of ebaF.